

CURRENT STATUS OF THE CLAIMS

In the Claims

The following is a marked-up version of the claims with the language that is underlined (“ ”) being added and the language that contains strikethrough (“~~—~~”) being deleted:

1. Currently Amended) A chip-level electronic package, comprising:
 at least one monolithic waveguide having:
 a waveguide core disposed in a fixed position on a lower cladding,
 an air-gap cladding around a portion of the waveguide core, and
 an overcoat layer engaging a portion of the air-gap cladding and engaging the
 lower cladding, wherein the air-gap cladding is completely bound on all sides by the
 overcoat layer, the lower cladding, and the waveguide core.
2. (Canceled)
3. (Previously Presented) The chip-level electronic package of claim 2 1, further comprising:
 a lead; and
 at least one air-gap layer disposed substantially under a portion of the lead and wherein
 the at least one waveguide is adjacent the air-gap layer.
- 4-5. (Canceled)
6. (Previously Presented) The chip-level electronic package of claim 1, further comprising:
 a coupling element adjacent to the waveguide core and engaging the air-gap cladding.
7. (Original) The chip-level electronic package of claim 1, wherein the waveguide core includes at
 least one coupling element.

8. (Original) The chip-level electronic package of claim 7, wherein the at least one coupling element is a volume grating coupling element.
9. (Previously Presented) The chip-level electronic package of claim 7, wherein the air-gap cladding is disposed around a portion of one of the at least one coupling element.
- 10-14. (Canceled)
15. (Original) The chip-level electronic package of claim 1, wherein the waveguide core is adjacent to a lower waveguide cladding.
- 16-28 (Canceled)
29. (Currently Amended) A method of operating a chip-level electronic package comprising:
coupling an optical signal to a one monolithic waveguide in the wafer-level electronic package; and
communicating the optical signal through the waveguide, the waveguide having a waveguide core disposed in a fixed position on a lower cladding, an air-gap cladding around a portion of the waveguide core, and an overcoat layer engaging a portion of the air-gap cladding and engaging the lower cladding, wherein the air-gap cladding is completely bound on all sides by the overcoat layer, the lower cladding, and the waveguide core.
30. (Canceled)
31. (Previously Presented) The chip-level electronic package of claim 1, wherein the overcoat layer is selected from silicon dioxide, silicon nitride, polyimides, polynorbornenes, epoxides, polyarylenes ethers, and parylenes.

32. (Previously Presented) The chip-level electronic package of claim 1, wherein the overcoat layer is selected from polyimides, polynorbornenes, epoxides, polyarylenes ethers, and parylenes.
33. (Previously Presented) The chip-level electronic package of claim 1, wherein the overcoat layer is selected from polyimides and polynorbornenes.
34. (Withdrawn) A chip-level electronic package, comprising:
at least one waveguide having a waveguide core, a sacrificial layer around a portion of the waveguide cores, and an overcoat layer engaging a portion of the sacrificial layer.
35. (Withdrawn) The chip-level electronic package of claim 34, wherein the overcoat layer is selected from silicon dioxide, silicon nitride, polyimides, polynorbornenes, epoxides, polyarylenes ethers, and parylenes.
36. (Withdrawn) The chip-level electronic package of claim 34, wherein the sacrificial layer is selected from polyimides, polynorbornenes, epoxides, polyarylenes ethers, and parylenes.
37. (Withdrawn) The chip-level electronic package of claim 34, wherein the sacrificial layer is selected from polypropylene carbonate, polyethylene carbonate, polynorborene carbonate.
38. (Withdrawn) The chip-level electronic package of claim 34, further comprising:
a coupling element adjacent to the waveguide core and engaging the sacrificial layer.
39. (Withdrawn) The chip-level electronic package of claim 34, wherein the waveguide core includes at least one coupling element.
40. (Withdrawn) The chip-level electronic package of claim 39, wherein the at least one coupling element is a volume grating coupling element.

41. (Withdrawn) The chip-level electronic package of claim 34, wherein the sacrificial layer is disposed around a portion of one of the at least one coupling element.
42. (New) A chip-level electronic package, comprising:
at least one monolithic waveguide having:
a waveguide core disposed in a fixed position on a lower cladding,
an air-gap cladding around a portion of the waveguide core, and
an overcoat layer engaging a portion of the air-gap cladding and engaging the lower cladding, wherein the air-gap cladding is bound by the overcoat layer, the lower cladding, and the waveguide core.
43. (New) A method of operating a chip-level electronic package comprising:
coupling an optical signal to a one monolithic waveguide in the wafer-level electronic package; and
communicating the optical signal through the waveguide, the waveguide having a waveguide core disposed in a fixed position on a lower cladding, an air-gap cladding around a portion of the waveguide core, and an overcoat layer engaging a portion of the air-gap cladding and engaging the lower cladding, wherein the air-gap cladding is bound by the overcoat layer, the lower cladding, and the waveguide core.